



# National Nutrient Database for Standard Reference

## Release 28 slightly revised May, 2016

### Full Report (All Nutrients) 09150, Lemons, raw, without peel

Report Date: June 30, 2017 12:11 EDT

Nutrient values and weights are for edible portion.

Food Group : Fruits and Fruit Juices

Common Name: Includes USDA commodity food A415

Carbohydrate Factor: 2.48 Fat Factor: 8.37 Protein Factor: 3.36 Nitrogen to Protein Conversion Factor: 6.25

Refuse:47% Refuse Description: 45% peel, 2% seeds

| Nutrient                    | Unit | 1 Value<br>Per100 g | Data<br>points | Std. Error | 1 cup, sections<br>212g | 1 fruit (2-1/8" dia)<br>58g | 1 fruit (2-3/8" dia)<br>84g | 1 wedge or slice (1/8 of<br>one 2-1/8" dia lemon)<br>7g | 1 NLEA serving<br>58g |
|-----------------------------|------|---------------------|----------------|------------|-------------------------|-----------------------------|-----------------------------|---|-----------------------|
| <strong>Proximates</strong> |      |                     |                |            |                         |                             |                             |   |                       |
| Water                       | g    | 88.98               | 5              | 0.820      | 188.64                  | 51.61                       | 74.74                       | 6.23  | 51.61                 |
| Energy                      | kcal | 29                  | --             | --         | 61                      | 17                          | 24                          | 2   | 17                    |
| Energy                      | kJ   | 121                 | --             | --         | 257                     | 70                          | 102                         | 8   | 70                    |
| Protein                     | g    | 1.10                | --             | --         | 2.33                    | 0.64                        | 0.92                        | 0.08  | 0.64                  |
| Total lipid (fat)           | g    | 0.30                | --             | --         | 0.64                    | 0.17                        | 0.25                        | 0.02  | 0.17                  |
| Ash                         | g    | 0.30                | --             | --         | 0.64                    | 0.17                        | 0.25                        | 0.02  | 0.17                  |
| Carbohydrate, by difference | g    | 9.32                | --             | --         | 19.76                   | 5.41                        | 7.83                        | 0.65  | 5.41                  |
| Fiber, total dietary        | g    | 2.8                 | --             | --         | 5.9                     | 1.6                         | 2.4                         | 0.2   | 1.6                   |
| Sugars, total               | g    | 2.50                | --             | --         | 5.30                    | 1.45                        | 2.10                        | 0.17  | 1.45                  |
| <strong>Minerals</strong>   |      |                     |                |            |                         |                             |                             |   |                       |
| Calcium, Ca                 | mg   | 26                  | --             | --         | 55                      | 15                          | 22                          | 2   | 15                    |
| Iron, Fe                    | mg   | 0.60                | --             | --         | 1.27                    | 0.35                        | 0.50                        | 0.04  | 0.35                  |
| Magnesium, Mg               | mg   | 8                   | --             | --         | 17                      | 5                           | 7                           | 1   | 5                     |
| Phosphorus, P               | mg   | 16                  | --             | --         | 34                      | 9                           | 13                          | 1   | 9                     |
| Potassium, K                | mg   | 138                 | --             | --         | 293                     | 80                          | 116                         | 10  | 80                    |
| Sodium, Na                  | mg   | 2                   | --             | --         | 4                       | 1                           | 2                           | 0   | 1                     |
| Zinc, Zn                    | mg   | 0.06                | 1              | --         | 0.13                    | 0.03                        | 0.05                        | 0.00  | 0.03                  |
| Copper, Cu                  | mg   | 0.037               | 1              | --         | 0.078                   | 0.021                       | 0.031                       | 0.003   | 0.021                 |
| Manganese, Mn               | mg   | 0.030               | --             | --         | 0.064                   | 0.017                       | 0.025                       | 0.002   | 0.017                 |
| Selenium, Se                | µg   | 0.4                 | --             | --         | 0.8                     | 0.2                         | 0.3                         | 0.0   | 0.2                   |

| Nutrient                           | Unit | 1 Value Per100 g | Data points | Std. Error | 1 cup, sections 212g | 1 fruit (2-1/8" dia) 58g | 1 fruit (2-3/8" dia) 84g | 1 wedge or slice (1/8 of one 2-1/8" dia lemon) 7g | 1 NLEA serving 58g |
|------------------------------------|------|------------------|-------------|------------|----------------------|--------------------------|--------------------------|---|--------------------|
| <b>Vitamins</b>                    |      |                  |             |            |                      |                          |                          |   |                    |
| Vitamin C, total ascorbic acid     | mg   | 53.0             | --          | --         | 112.4                | 30.7                     | 44.5                     | 3.7   | 30.7               |
| Thiamin                            | mg   | 0.040            | --          | --         | 0.085                | 0.023                    | 0.034                    | 0.003   | 0.023              |
| Riboflavin                         | mg   | 0.020            | --          | --         | 0.042                | 0.012                    | 0.017                    | 0.001   | 0.012              |
| Niacin                             | mg   | 0.100            | --          | --         | 0.212                | 0.058                    | 0.084                    | 0.007   | 0.058              |
| Pantothenic acid                   | mg   | 0.190            | --          | --         | 0.403                | 0.110                    | 0.160                    | 0.013   | 0.110              |
| Vitamin B-6                        | mg   | 0.080            | --          | --         | 0.170                | 0.046                    | 0.067                    | 0.006   | 0.046              |
| Folate, total                      | µg   | 11               | 7           | 2.646      | 23                   | 6                        | 9                        | 1   | 6                  |
| Folic acid                         | µg   | 0                | --          | --         | 0                    | 0                        | 0                        | 0   | 0                  |
| Folate, food                       | µg   | 11               | 7           | 2.646      | 23                   | 6                        | 9                        | 1   | 6                  |
| Folate, DFE                        | µg   | 11               | --          | --         | 23                   | 6                        | 9                        | 1   | 6                  |
| Choline, total                     | mg   | 5.1              | --          | --         | 10.8                 | 3.0                      | 4.3                      | 0.4   | 3.0                |
| Vitamin B-12                       | µg   | 0.00             | --          | --         | 0.00                 | 0.00                     | 0.00                     | 0.00  | 0.00               |
| Vitamin B-12, added                | µg   | 0.00             | --          | --         | 0.00                 | 0.00                     | 0.00                     | 0.00  | 0.00               |
| Vitamin A, RAE                     | µg   | 1                | --          | --         | 2                    | 1                        | 1                        | 0   | 1                  |
| Retinol                            | µg   | 0                | --          | --         | 0                    | 0                        | 0                        | 0   | 0                  |
| Carotene, beta <sup>1 2</sup>      | µg   | 3                | 2           | --         | 6                    | 2                        | 3                        | 0   | 2                  |
| Carotene, alpha <sup>1 2</sup>     | µg   | 1                | 2           | --         | 2                    | 1                        | 1                        | 0   | 1                  |
| Cryptoxanthin, beta <sup>2</sup>   | µg   | 20               | 1           | --         | 42                   | 12                       | 17                       | 1   | 12                 |
| Vitamin A, IU                      | IU   | 22               | --          | --         | 47                   | 13                       | 18                       | 2   | 13                 |
| Lycopene <sup>1</sup>              | µg   | 0                | 1           | --         | 0                    | 0                        | 0                        | 0   | 0                  |
| Lutein + zeaxanthin <sup>1 2</sup> | µg   | 11               | 2           | --         | 23                   | 6                        | 9                        | 1   | 6                  |
| Vitamin E (alpha-tocopherol)       | mg   | 0.15             | --          | --         | 0.32                 | 0.09                     | 0.13                     | 0.01  | 0.09               |
| Vitamin E, added                   | mg   | 0.00             | --          | --         | 0.00                 | 0.00                     | 0.00                     | 0.00  | 0.00               |
| Vitamin D (D2 + D3)                | µg   | 0.0              | --          | --         | 0.0                  | 0.0                      | 0.0                      | 0.0   | 0.0                |
| Vitamin D                          | IU   | 0                | --          | --         | 0                    | 0                        | 0                        | 0   | 0                  |
| Vitamin K (phylloquinone)          | µg   | 0.0              | --          | --         | 0.0                  | 0.0                      | 0.0                      | 0.0   | 0.0                |
| <b>Lipids</b>                      |      |                  |             |            |                      |                          |                          |   |                    |
| Fatty acids, total saturated       | g    | 0.039            | --          | --         | 0.083                | 0.023                    | 0.033                    | 0.003   | 0.023              |
| 4:0                                | g    | 0.000            | --          | --         | 0.000                | 0.000                    | 0.000                    | 0.000   | 0.000              |
| 6:0                                | g    | 0.000            | --          | --         | 0.000                | 0.000                    | 0.000                    | 0.000   | 0.000              |
| 8:0                                | g    | 0.000            | --          | --         | 0.000                | 0.000                    | 0.000                    | 0.000   | 0.000              |
| 10:0                               | g    | 0.000            | --          | --         | 0.000                | 0.000                    | 0.000                    | 0.000   | 0.000              |



| Nutrient                     | Unit | 1 Value Per100 g | Data points | Std. Error | 1 cup, sections 212g | 1 fruit (2-1/8" dia) 58g | 1 fruit (2-3/8" dia) 84g | 1 wedge or slice (1/8 of one 2-1/8" dia lemon) 7g | 1 NLEA serving 58g |
|------------------------------|------|------------------|-------------|------------|----------------------|--------------------------|--------------------------|---|--------------------|
| Kaempferol <sup>6 7</sup>    | mg   | 0.0              | 2           | --         | 0.1                  | 0.0                      | 0.0                      | 0.0   | 0.0                |
| Myricetin <sup>6 7</sup>     | mg   | 0.5              | 2           | --         | 1.1                  | 0.3                      | 0.4                      | 0.0   | 0.3                |
| Quercetin <sup>3 4 6 7</sup> | mg   | 1.1              | 4           | 0.82       | 2.4                  | 0.7                      | 1.0                      | 0.1   | 0.7                |

Sources of Data

<sup>1</sup>I.M. Heinonen, V. Ollilainen, E. Linkola, P. Varo, P. Koivistoinen Carotenoids in Finnish Foods: Vegetables, Fruits, and Berries, 1989 Journal of Agriculture and Food Chemistry 37 pp.655-659

<sup>2</sup>H. Muller Determination of the carotenoid content in selected vegetables and fruit by HPLC and photoiodide array detection, 1997 Z. Lebensm Unters Forsch A 204 pp.88-94

<sup>3</sup>Mattila, P., Astola, J., and Kumpulainen, J. Determination of flavonoids in plant material by HPLC with diode-array and electro-array detection., 2000 J. Agric. Food Chem. 48 pp.5834-5841

<sup>4</sup>Vandercock, C. E., and Tisserat, B. Flavonoid changes in developing lemons grown in vivo and in vitro., 1989 Phytochemistry 28 pp.799-803

<sup>5</sup>Justesen, U., Knuthsen, P., and Leth, T. Quantitative analysis of flavonols, flavones, and flavonones in fruits, vegetables and beverages by high-performance liquid chromatography with photo-diode array and mass spectrometric detection., 1998 J. Chromatogr. A 799 pp.101-110

<sup>6</sup>Lugasi, A. and Hovari, J. Flavonoid aglycons in foods of plant origin II. Fresh and dried fruits., 2002 Acta Alimentaria 31 1 pp.63-71

<sup>7</sup>Kevers, C., Falkowski, M., Tabart, J., Defraigne, J.-O., Dommes, J., and Pincemail, J. Evolution of antioxidant capacity during storage of selected fruits and vegetables, 2007 J. Agric. Food Chem. 55 pp.8596-8603